



**ENGINEERING**  
PRINCIPLES®

Engineering Principles®, LLC  
20 Main Street, Suite 206  
Natick, MA 01760  
telephone 508-315-3900  
facsimile 866-447-2934

Curriculum Vitae

**William W. Van Arsdell, Ph.D., P.E.**  
Principal Engineer

**Professional Profile**

Dr. William Van Arsdell's expertise is in the discipline of mechanical engineering, including the fields of occupant crash protection, accident reconstruction, mechanics, materials, and design. Dr. Van Arsdell has extensive experience evaluating the performance of seat belts, airbags, child restraint systems, and the crashworthiness of motor vehicles. He has conducted over one hundred full-scale vehicle crash tests and sled tests. Dr. Van Arsdell has also evaluated and tested over one thousand seat belts, and has investigated hundreds of motor vehicle collisions. Throughout his career, Dr. Van Arsdell has used his expertise in mechanical engineering to solve a broad range of problems related to accident reconstruction, failure analysis, and design. Dr. Van Arsdell's research addresses occupant protection, occupant kinematics, accident reconstruction, mechanics, material selection, and the deformation, fatigue and fracture of materials.

Dr. Van Arsdell has a Ph.D. from Massachusetts Institute of Technology in Mechanical Engineering. Prior to founding Engineering Principles, Dr. Van Arsdell worked at Exponent for more than 10 years and at General Motors Corporation for over two years. As a graduate student, Dr. Van Arsdell has taught mechanics and materials at the University of Illinois at Urbana-Champaign. Dr. Van Arsdell is a NHTSA certified Child Passenger Safety Technician and has successfully completed a Traffic Accident Reconstruction Training course at Northwestern University.

**Credentials and Professional Honors**

Ph.D., Mechanical Engineering, Massachusetts Institute of Technology, 1997  
M.S., Mechanical Engineering, University of Illinois at Urbana-Champaign, 1993  
B.S., Mechanical Engineering, University of Arizona, 1989

Registered Professional Engineer (Mechanical), Massachusetts, #43035  
NHTSA Child Passenger Safety Technician, #T68025

Outstanding Teacher Award, University of Illinois at Urbana-Champaign  
Henry Fuchs Fatigue Design and Evaluation Award, Society of Automotive Engineers  
University Fellowship, University of Illinois at Urbana-Champaign  
Doctoral Scholar, Society of Automotive Engineers/Chrysler Foundation

Member: American Society of Mechanical Engineers, American Society of Metals, Society of Automotive Engineers, American Society of Testing and Materials



## Selected Publications and Presentations

“Performance of Belt-Positioning Boosters and 5-Point Harness CRSs in Frontal and Side Impacts,” SAE World Congress, paper number 2013-01-1159, Detroit Michigan, April 16-18, 2013 (with P. Weber, C. Stankewich, and B. Larson)

“Buckle-Latch Insertion Force and Belt Tension in Everyday Driving,” SAE World Congress, paper number 2011-01-0267, Detroit Michigan, April 12-14, 2011 (with P. Weber, C. Stankewich, D. Davee and M. Moralde).

“Effect of Padding on Child Restraint Performance during Side Impact Collisions,” SAE World Congress, paper number 2009-01-1244, Detroit Michigan, April 20-23, 2009 (with D. Amirault, A. Marsden, S. Oltman, M. Prange and D. Richards).

“Frontal Impact Rear Seatbelt Load Marks: An In-Depth Analysis,” SAE World Congress, paper number 2009-01-1249, Detroit Michigan, April 20-23, 2009 (with W. Ballard, R. Burnett and D. Marth).

“Seat Belt Buckle Release by Inadvertent Contact,” SAE World Congress, paper number 2008-01-1236, Detroit Michigan, April 14-17, 2008 (with D. Davee, C. Raasch and M. Moralde).

“Dynamic Response of End-Release Buckles to Floor Anchor Impulses,” SAE World Congress, paper number 2006-01-0915, Detroit Michigan, April 3-6, 2006 (with E. Cooper, A. Curzon, M. Marine, J. Wirth).

“FMVSS Child Occupant Protection Regulations,” SAE World Congress, paper number 2006-01-1138, Detroit Michigan, April 3-6, 2006 (with J. Goldwitz).

“The Evolution of FMVSS 213: Child Restraint Systems,” SAE World Congress, paper number 2005-01-1840, Detroit Michigan, April 11-15, 2005.

“Minimal Effect of Amplified Vehicle Accelerations on Seat Belt Buckle Resistance to Inertial Release,” SAE World Congress, paper number 2004-01-0854, Detroit Michigan, March 8-11, 2004 (with D. Davee and C. Raasch).

“Subcritical Crack Growth in Silicon MEMS,” *Journal of Microelectromechanical Systems*, Vol. 8, September 1999 (with S. Brown).

“Crack Growth in Polysilicon MEMS,” Proceedings, ASME Congress and Exposition, Anaheim, November 1998 (with S. Brown).

“Use of MEMS to Measure Growth of Microcracks,” Proceedings, ASME Congress and Exposition, Anaheim, November 1998 (with S. Brown, C. Chui, and C. Muhlstein).

“Standardized Characterization Techniques for Structural Films and Electronic Materials,” Proceedings, Micromachining and Microfabrication, SPIE, San Jose, September 1998 (with S. Brown and C. Muhlstein).

William W. Van Arsdell, Ph.D., P.E.  
Page 3

“Reliability and Fatigue Testing of MEMS,” Proceedings, Commercialization of Microsystems 98, SEMI, San Diego, September 1998 (with S. Brown and C. Muhlstein).

“Advances in Fatigue Testing of MEMS Materials,” Proceedings, Microelectromechanical Structures for Materials Research – Symposium N, Materials Research Society, April 1998 (with S. Brown and C. Muhlstein).

“Materials Reliability in MEMS Devices,” Proceedings, 1997 International Conference on Solid-State Sensors and Actuators, Chicago, June 1997 (with S. Brown and C. Muhlstein).

“Thermo-mechanical Fatigue of Metal Matrix Composites,” Spring TMS Meeting, San Francisco, March 1994 (with H. Sehitoglu).

“The Effect of Particulate Size on the Thermo-Mechanical Fatigue Behavior of Metal Matrix Composites,” *Fatigue 93*, 1993 (with H. Sehitoglu and M. Mushiake).

